



U.S. Fish & Wildlife Service

Crane Meadows

National Wildlife Refuge

Summary

Draft Comprehensive Conservation Plan and Environmental Assessment

July 2010

Comments Sought on Crane Meadows NWR's Draft CCP/EA

The U.S. Fish and Wildlife Service (Service) has completed a Draft Comprehensive Conservation Plan and Environmental Assessment (Draft CCP/EA) that describes the goals, objectives and strategies established to guide Crane Meadows NWR for the next 15 years.

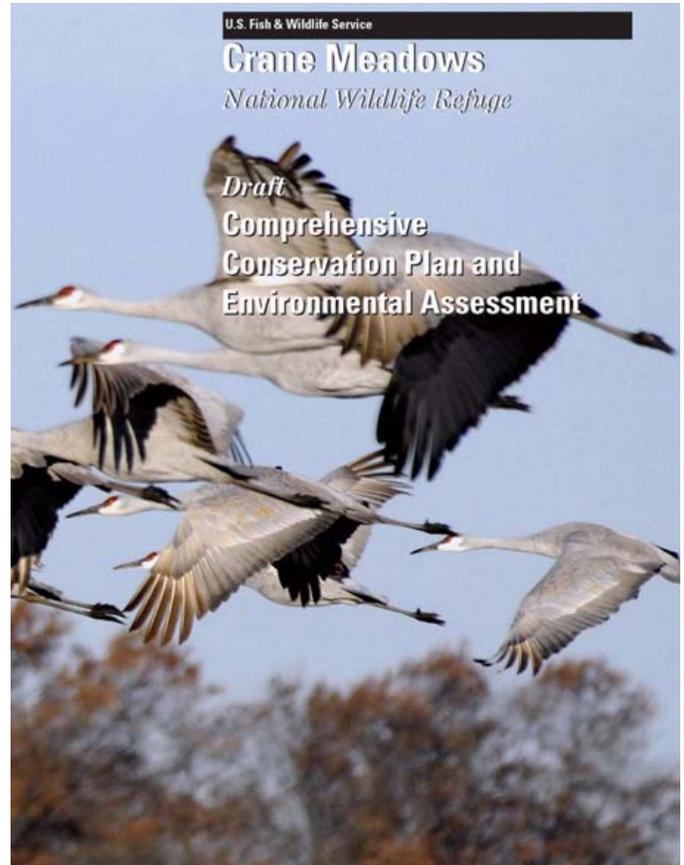
The Refuge is located east of Little Falls in central Minnesota (see location figure on page 2).

The Draft CCP/EA is currently available for public review and comment. The Plan is available on-line, and it is available on a compact disk in por-

table document format (pdf). A limited number of paper copies are available at the Refuge Headquarters.

The public review period is an opportunity for everyone who cares about Crane Meadows NWR and its future to review the proposed management direction and comment on it.

This summary describes the proposed Refuge management, describes the management alternatives considered in planning, and describes how people can submit comments on the Draft CCP/EA.



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See the Draft CCP/EA

You can view the full CCP on-line at: <http://www.fws.gov/midwest/planning/Crane-Meadows>

Paper copies of the CCP are available for review at several area libraries, including:

- Pierz Public Library
- Royalton Public Library
- Swanville Public Library
- Upsala Public Library
- Little Falls City Library

Copies of the plan are also available at the Refuge. You can request a copy in a variety of ways:

E-mail the Refuge at: CraneMeadows@fws.gov

Call the Refuge at: 320/632-1575

Mail a request to:

Crane Meadows NWR
Attention: CCP Request
19502 Iris Road
Little Falls, MN 56345

Location of Crane Meadows NWR



What the Draft CCP/EA Proposes

The management alternative proposed in the Draft CCP would restore Refuge habitat to near-historic benchmark conditions over the next 15 years and increase recreation opportunities for visitors.

Management would favor a diverse array of upland savanna and wetland habitats, and existing prairie and woodland acreages would be reduced over the long-term.

The Service would focus on gathering more data about the lands and waters of Crane Meadows NWR. Biological inventory and monitoring for wildlife species of conservation concern, guilds of birds, native plants, and inva-

sive species would increase. The Refuge would increase its participation in water monitoring efforts, work to improve upstream water resources that affect the Refuge, and implement adaptive disturbance rotations based on a well-developed prescribed fire plan.

The proposed management plan includes increased land acquisition as well as an increase in private lands work, with both targeting high priority areas.

Visitor services would be offered at more locations. In addition to increasing facilities on the Headquarters Unit, new facilities or signage would be provided along Highway 27 on the northern boundary of the Refuge, along the county-maintained Soo Line Recreational Trail, and on the Sedge Meadow Unit in the northeast portion of the Refuge.

The Refuge is also proposing to offer specific, managed hunts and to evaluate opportunities for quality fishing experiences both on existing Service lands and as new lands are acquired.

The Refuge is proposing to increase staffing from two positions to four positions according to the Service's 2008 staffing model. Full staffing would include: a refuge wildlife specialist, a biologist, an administrative assistant, and a maintenance position.

Figures showing desired future habitat, existing upland habitat sources, proposed future visitor services facilities, are included in this summary beginning on page 8.

Why a CCP?

Planning for national wildlife refuges has always occurred, but the planning process and products were not consistent throughout the Refuge System. This changed in 1997, when the National Wildlife Refuge System Improvement Act established a formal planning process for refuges to use and specified the elements required in a CCP. The Improvement Act and Service policy now require the Refuge System to manage national wildlife refuges based on a comprehensive conservation plan.

Since the Improvement Act was enacted, the U.S. Fish and Wildlife Service has been working to complete a CCP for every refuge in the Refuge System. The plans outline how a refuge will fulfill its legal purpose and contribute to the Refuge System's wildlife, habitat, and public use goals. Comprehensive conservation plans articulate management goals for a 15-year period and specify the objectives and strategies needed to accomplish these goals. Comprehensive conservation plans give a refuge's neighbors, the local community, Friends groups, outdoor recreation enthusiasts and others a clear picture of how a refuge will be managed and the reasoning behind that management direction.

Many factors, such as funding and natural events like flooding or drought, will influence the Service's ability to fully implement the Crane Meadows NWR CCP. Comprehensive conservation plans outline management direction, but they do not constitute a commitment for staffing increases, operational and maintenance increases, or funding for future land acquisition.



Pelicans at Crane Meadow NWR. Photo Credit: Beau Liddell

Who We Are and What We Do

Crane Meadows NWR is administered by the U.S. Fish and Wildlife Service, the primary federal agency responsible for conserving, protecting, and enhancing the nation's fish and wildlife populations and their habitats. The Service oversees the enforcement of federal wildlife laws, management and protection of migratory bird populations, restoration of nationally significant fisheries, administration of the Endangered Species Act, and the restoration of wildlife habitat such as wetlands. The Service also manages the National Wildlife Refuge System, which was founded in 1903 when President Theodore Roosevelt designated Pelican Island in Florida as a sanctuary for Brown Pelicans.

Today, the Refuge System is a network of more than 550 national wildlife refuges and other Refuge System units covering more than 150 million acres of public lands and waters. Most of these lands are in Alaska, with approximately 16 million acres located in the lower 48 states and several island territories. Overall, the Refuge System provides habitat for more than 5,000 species of birds, mammals, fish, and insects.

Refuges also provide unique opportunities for people. When activities are compatible with wildlife and habitat conservation, refuges are places where people can enjoy wildlife-dependent recreation such as hunting, fishing, wildlife observation, photography, envi-

ronmental education, and environmental interpretation.

Vital Statistics

Established in 1992, Crane Meadows NWR protects a unique wetland complex that includes Rice and Skunk Lakes, Platte and Skunk Rivers, Rice and Buckman Creeks, and many sedge meadow wetlands.

Presently, the Service has acquired just over 1,800 acres of the approved 13,540-acre acquisition area. Approximately 900 acres are owned and managed by the state, and the remaining land is privately owned (see Figure on page 10). The resulting landscape is a mosaic of land ownership and land-use types surrounded predominantly by agriculture.

The Refuge is home to many native species and serves as a nesting ground and stopover location for several migratory bird species such as the Greater Sandhill Crane. The Refuge also contains relatively rare habitat types including oak savannas, sand prairies, and sedge meadows.

Refuge Purpose, Vision and Goals

Refuge Purpose

Fish and Wildlife Act of 1956

- "... for the development, advancement, management, conservation, and protection of fish and wildlife resources ..." 16 U.S.C. 742f(a)(4)
- "... for the benefit of the United States Fish and Wildlife Service, in performing its activities and services. Such acceptance may be subject to the terms of any restrictive or affirmative covenant, or condition of servitude ..." 16 U.S.C. 742f(b)(1)

Emergency Wetlands Resources Act of 1986

- "... the conservation of the wetlands of the Nation in order to maintain the public benefits they provide and to help fulfill international obligations contained in various migratory bird treaties and conventions ..." 16 U.S.C. 3901(b), 100 Stat. 3583

Refuge Vision

Crane Meadows National Wildlife Refuge is a unique sand plain wetland/upland complex with a rich mosaic of healthy sedge meadow, shallow lake, oak savanna, prairie, shrubland, and forest habitats. The Refuge encompasses a large intact wetland system at the confluence of four tributaries that feed high quality water to Rice and Skunk Lakes and the Platte River. The Refuge provides important habitat for cranes, waterfowl, and a diversity of other wildlife. Visitors enjoy a variety of wildlife-dependent recreation activities that inspire a heightened environmental ethic and active support for the Refuge and its programs. Crane Meadows is an outstanding example of sound wildlife management and habitat restoration within the National Wildlife Refuge System.

Refuge Goals

Habitat

Conserve a diverse mosaic of habitats both on- and off-Refuge, particularly sedge meadow, shallow lake, oak savanna, prairie, and other declining endemic habitat types, to meet the needs of native plants and wildlife with emphasis on Service Regional Conservation Priority Species. Crane Meadows NWR will remain engaged in efforts to protect and enhance water quality and natural hydrology in the watershed.



Common Loon. Photo Credit: Beau Liddell

Wildlife

Protect, restore, and maintain native wildlife species to ensure biological diversity and abundance, with special emphasis on Service Regional Conservation Priority Species.

People

As an active partner in collaborative conservation, the Refuge will provide quality wildlife-dependent recreation, environmental education, and outreach to a diverse audience. These activities will preserve cultural resources and promote understanding, appreciation, and support for Crane Meadows NWR, the National Wildlife Refuge System, and natural resource conservation.

The Planning Process

The planning process for Crane Meadows NWR's comprehensive conservation plan was launched in December 2008 with a kick-off meeting held at the Refuge. Refuge and regional planning staff met to review existing baseline data, discuss the Refuge vision statement and goals, and review relevant planning documents. A list of required CCP elements was also developed at this meeting and during subsequent e-mail and telephone communications between Refuge staff and the Service's regional office. In addition to identifying information that would be needed in the planning process, Refuge staff also developed a list of stakeholders and a preliminary list of issues, concerns, challenges, opportuni-

ties, new directions, and potential sources of conflict to be addressed in the CCP.

The next step for the planning team was to ask neighbors, state agencies, tribal government, non-government organizations, and others interested in the future of the Refuge to identify the issues and opportunities they see confronting the Refuge. The public scoping period began on January 21, 2009, and ended on March 6, 2009. The comment period was announced in local media, and people were invited to submit comments to the Refuge. An open house was held in the Refuge maintenance building on February 19, 2009, to give the public an opportunity to discuss ideas with Refuge staff and regional planners. More than 50 people attended the open house, and the Refuge received a total of 20 written comments during the public scoping period.

During the last week of March 2009, the Refuge hosted a planning workshop in which participants helped review, evaluate, and plan the biological and visitor services programs at the Refuge. An initial set of alternative management themes was also developed during this workshop.

The next stage of scoping took place at the regional office. During this step in the scoping process, leaders from the Refuge System, Migratory Birds, Ecological Services and other key Midwest Region programs further developed and refined the list of issues that would be addressed in the CCP. Refuge staff and planning staff met with a variety of Service personnel in the Regional Office in a meeting held in May 2009.

The Draft CCP was released for public review and comment on July 6, 2010. Everyone interested in future management at Crane Meadows NWR is invited to comment on the Draft CCP.

Refuge Issues

Issues play an important role in planning. Issues focus the planning effort on the most important topics and provide a base for considering alternative

approaches to management while evaluating the consequences of managing under these alternative approaches. The issues, concerns, and opportunities expressed during the first phase of planning have been organized under the following headings:

Habitat

1. If the integrity of this unique, relatively unaltered wetland ecosystem is to persist, it must be protected. The remaining in-tact wetland and upland habitat needs to be combined with restored adjacent areas to achieve a healthy, natural system resembling historic conditions.
2. The slow growth of the Refuge has proven frustrating for numerous supporters of the Refuge. Small, scattered tracts of land make habitat management less efficient, diminish the benefit to wildlife, make law enforcement more difficult, and increase the potential for conflicts with neighbors.
3. Water quality, a key factor in the health of the Rice-Skunk wetland complex, is threatened by hydrologic alteration, pollution, and sedimentation from adjacent land uses.

Wildlife

4. There are numerous threats to the long-term persistence of healthy wildlife populations at Crane Meadows NWR including habitat disturbance, contamination and disease, competition from exotic/invasive species, and the lack of monitoring and research necessary for management.

People

5. Some people would like to have the opportunity to hunt on Refuge lands, others would like to see the Refuge maintained as sanctuary for wildlife. Nevertheless, the lack of a large, contiguous land base presents challenges to offering high-quality and safe hunting opportunities.
6. Some individuals would like to see the Refuge allow shoreline fishing opportunities, and others expressed opposition to fishing from Refuge shores.

7. Environmental education facilities and programming are currently limited at Crane Meadows NWR. There is interest in expanding the visitor services programming, to include facilities such as an outdoor classroom, and increasing staff so that the Refuge can offer environmental education programming in area schools.
8. Motorized vehicles that are prohibited on the Refuge are permitted on the Soo Line multiple-use trail that transects the Refuge, and some people would like to see greater education and law enforcement efforts to ensure appropriate trail use.
9. Visitor services facilities on the Refuge are not sufficient to welcome, orient, and inform visitors.
10. There are a number of cultural resources within the Refuge acquisition boundary that are not adequately identified or protected.
11. To meet current and future management needs at the Refuge, additional support in the form of staffing and partnerships will be needed.

Alternatives Considered

The Environmental Assessment prepared as part of the planning process describes and analyzes three management alternatives for Crane Meadows



Ruffed Grouse. Photo Credit: Beau Liddell

NWR. The Service identifies one as its preferred alternative and, and that alternatives is the basis for the Draft CCP that would guide activities on the Refuge for the next 15 years.

Alternative A (Current Management Direction)

Opportunistic Land Protection, Active Habitat Restoration, and Concentrated Visitor Services

The first alternative (A) for the future management of Crane Meadows NWR depicts a continuation of current Refuge management, or a 'no action' scenario, as required by the National Environmental Policy Act.

Currently, land acquisition is minimal, conservation work on private lands is extensive, and both occur opportunistically at Crane Meadows NWR. As land is acquired quality habitats are maintained, degraded habitats are improved or restored, and all habitat types have relative equal priority for acquisition and restoration. There is an active prescribed fire program, and minimal involvement with local water resources which are all under the jurisdiction of the state.

Wildlife management is minimal, and monitoring efforts follow existing, broader state and federal efforts.

Visitor use is concentrated on a single Refuge tract, the Headquarters Unit, and consists of wildlife observation, photography, hiking, cross-country skiing, and snowshoeing as seasons and trail conditions allow. No hunting or fishing is permitted. There are half a dozen annual programs, supported by an active Refuge Friends Group and local volunteers.



Prescribed burn at Crane Meadows NWR. Photo credit: FWS

Staff is limited to two positions: refuge wildlife specialist and maintenance.

Alternative B (Preferred Alternative)

Habitat Restoration to Pre-settlement Benchmark Conditions and Increased Provision of Visitors Services

This alternative outlines a long-term vision for habitat restoration to near-historic benchmark conditions and increases recreation opportunities for visitors over the 15-year planning horizon.

Geographically-explicit historic vegetation and ecological data would be used to identify desired quantities and distribution of individual habitat types for all lands, public or private, within Refuge acquisition boundary. Management would focus on creating a diverse array of wetland and upland savanna habitats, reinforcing historic conditions. Existing prairie and woodland acreages would be reduced over the long-term.

This alternative includes active participation in water monitoring efforts, improvement of upstream water resources that affect the Refuge, and calls for adaptive disturbance rotations based on a well-developed prescribed fire plan. Land acquisition and private lands work would increase, both targeting high priority areas. Biological inventory and monitoring would

Table 1: Habitat: Current and Proposed, Crane Meadows NWR

Habitat Type	Habitat ¹	Service-owned Acres (1,800)		Total Acquisition Boundary Acres (13,540)	
		Current ²	Approximate 15-Year Objective ³	Current ²	Approximate Long-term Objective (100+ years)
Wetland	Open Water	18	18	150	150
Wetland	River/Stream	3 miles	3 miles	32 miles	32 miles
Wetland	Emergent Marsh	100	100	1,600	1,600
Wetland	Sedge Meadow	460	460	2,640	3,350
Wetland	Willow-Dogwood Shrub Swamp	410	410	2,500	2,500
Wetland	Southern Rich Conifer Swamp	0	0	0	100
Wetland	Northern Floodplain Forest	50	50	435	300
Upland	Prairie (Wet, Southern Mesic, and Southern Dry)	380	305	910	500
Upland	Southern Dry Savanna	5	210	185	4,700
Upland	Jack Pine Woodland	10	5	85	0
Upland	Oak Woodland	200	100	1,180	300
Upland	Oak-Aspen Woodland	65	33	670	0
Upland	Agriculture	10	0	2,940	0
Upland	Conifer Plantation	10	0	200	0

1. *Refuge vegetation was identified and quantified during a 2006 aerial imagery project conducted by the Service. Habitat classes were later standardized using plant communities described in the Minnesota DNR's Field Guide to the Native Plant Communities; Eastern Broadleaf Forest Province (2005).*
2. *Current habitat acreages for both existing fee-title and acquisition boundary are approximate and based on GIS area calculations.*
3. *These numbers only account for land currently-owned by the Service, and will change with any new land acquisitions made by the Service over the 15-year planning period.*

increase for wildlife species of conservation concern, guilds of birds, native plants, and invasive species.

Visitor services would be offered at a greater number of locations. In addition to increasing facilities on the Headquarters Unit, new facilities or signage would be provided along Highway 27 on the northern boundary of the Refuge, along the county-maintained Soo Line Recreational Trail that transects the Refuge, and on the Sedge Meadow Unit in the northeast portion of the Refuge.

Specific, managed hunts would be offered, and opportunities for quality fishing experiences would be evaluated both on existing Service lands and as

new lands are acquired. These changes and new visitor opportunities would likely result in increased visitation to the Refuge, increased attendance in Refuge programs and events, and increased participation in Friends Group and volunteer roles.

This alternative also calls for full staffing at Crane Meadows NWR according to the Service's 2008 staffing model, including four positions: refuge wildlife specialist, biologist, administrative assistant, and maintenance.

Alternative C

High Involvement in Watershed Improvement

The third alternative (C) retains many of the concepts and objectives from Alternative B, but increases the emphasis given to water resources both on-Refuge and in the watershed upstream of the wetland complex.

This alternative more directly addresses the principal establishing Refuge purpose, for '... the conservation of the wetlands of the Nation...', and seeks to maximize efforts to under-



Crane Meadows NWR by water. Photo Credit: FWS

stand, protect, and conserve the water resources that affect the Refuge's unique wetland complex.

Using Alternative B as a base, Alternative C would restore additional wetland and upland acres up-watershed of the Refuge, expand water resource monitoring and improvement activities throughout the east half of the Platte-Spung watershed, target a limited quantity of additional land adjacent to the existing Refuge boundary with critical water resource value for acquisition, increase and direct private lands work to priority aquatic and riparian areas upstream of the Refuge, emphasize fishing as a primary recreation opportunity watershed-wide, direct additional education and interpretation efforts to

water resource topics, and prioritize partnerships, outreach opportunities, and volunteerism that occur within or directly affect the Refuge's watershed.

Tell Us What You Think

Crane Meadows NWR and the U.S. Fish and Wildlife Service want the comprehensive conservation plan to be a visionary and practical document that improves habitat for wildlife and a connection to the environment for its visitors.

Your thoughts are an essential part of accomplishing this. Have we missed an issue? Have we overlooked an opportunity? Let us know during the 30-day public review period. In order for your comments to be considered during preparation of the Final CCP, we need to receive your comment by August 6, 2010.

You have a variety of opportunities to communicate your thoughts on the Draft CCP/EA. First, you are welcome to write us a letter. Address written comments:

Crane Meadows NWR
Attention: CCP Request
19502 Iris Road
Little Falls, MN 56345

Comments are also welcome via e-mail:

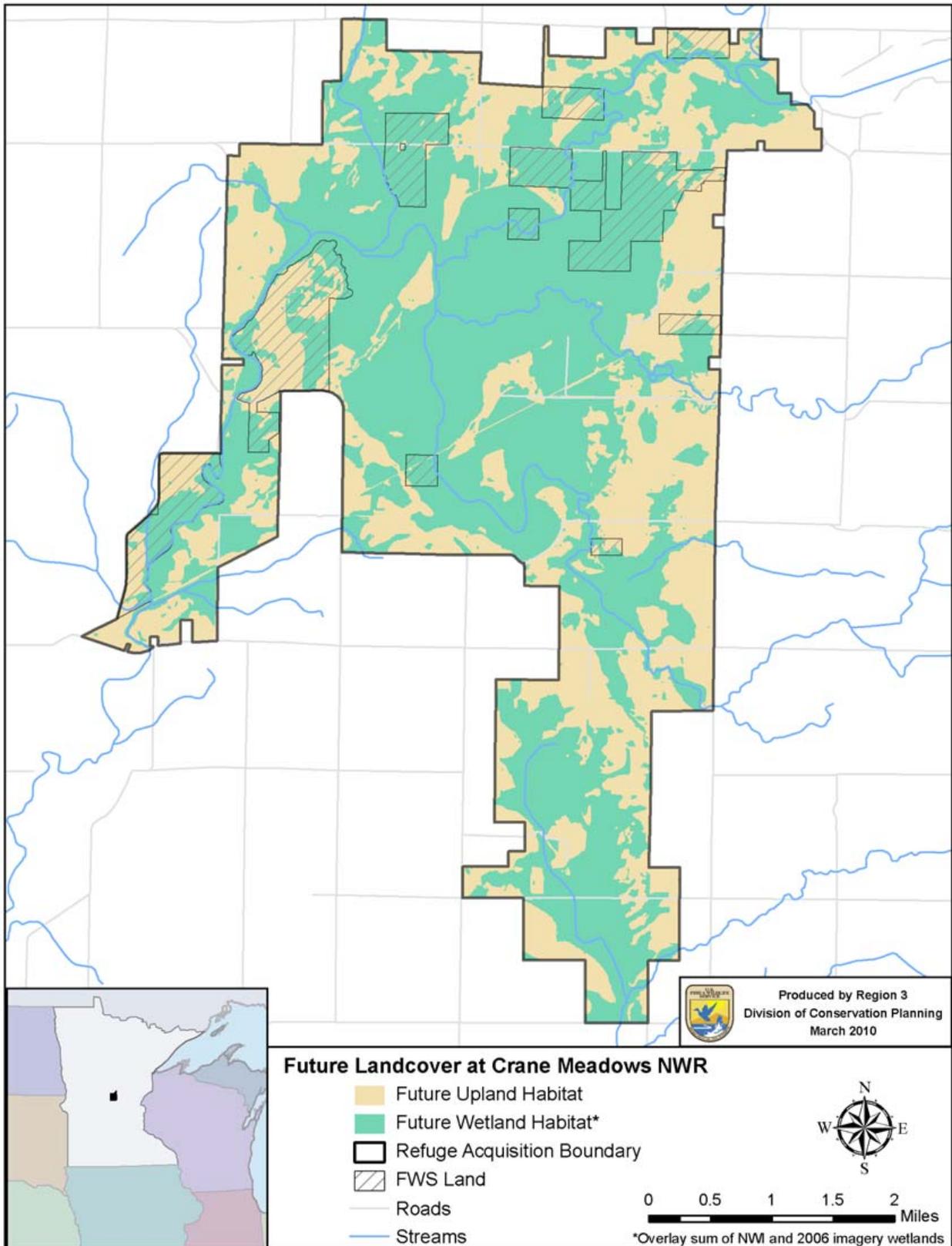
r3planning@fws.gov

In e-mailed comments, please specify "Crane Meadows NWR CCP Comment" in the subject line.

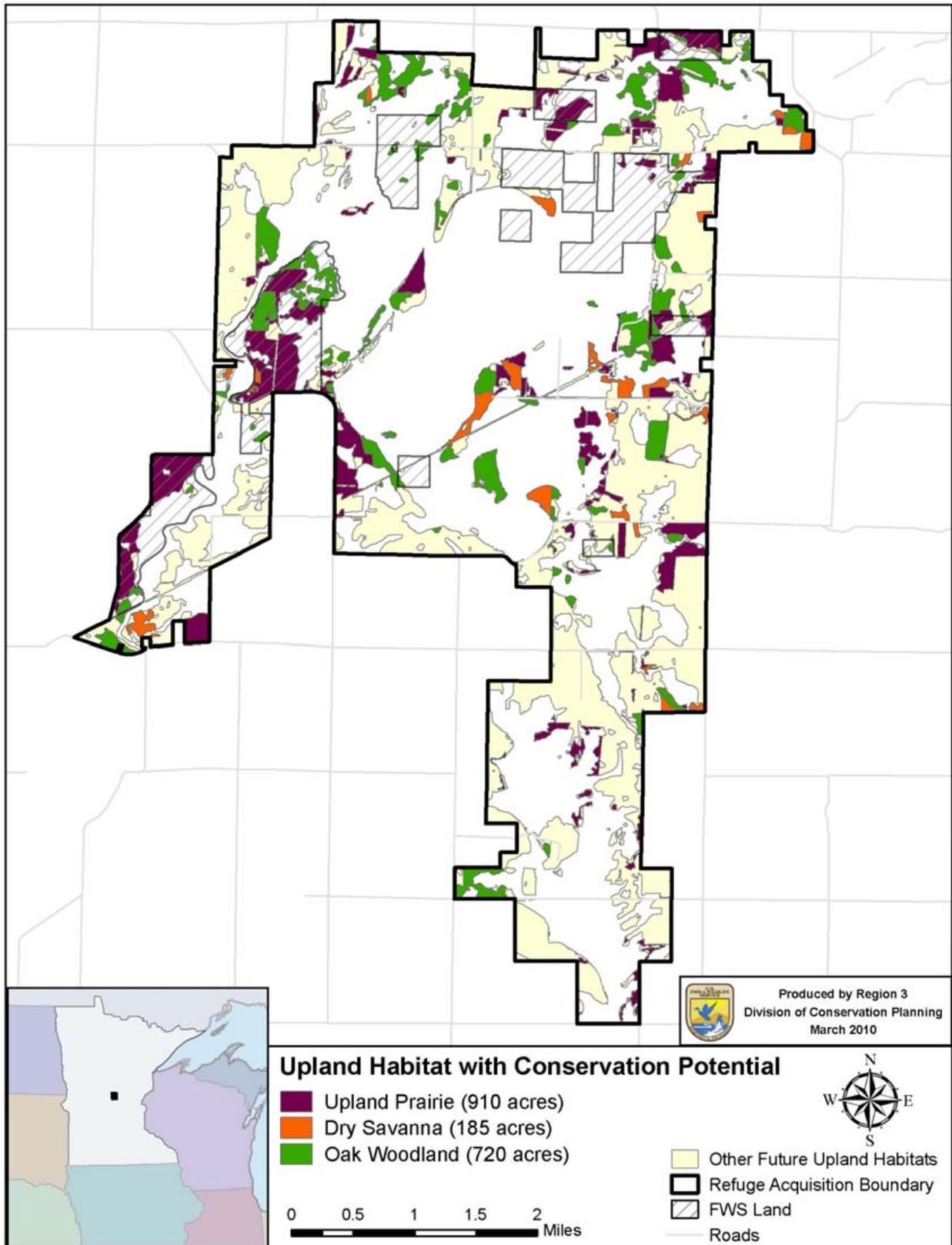
Open House Scheduled

During the public review comment period, the Refuge will host an open house from 2-7 p.m. on Tuesday, July 20, 2010, at the Refuge maintenance building. Refuge staff and regional planning staff will be available during the open house to discuss the Draft CCP/EA and future management direction for the Refuge.

Desired Future Land Cover, Crane Meadows NWR



Existing Upland Habitat Source Areas, Crane Meadows NWR



Future Visitor Facilities, Crane Meadows NWR

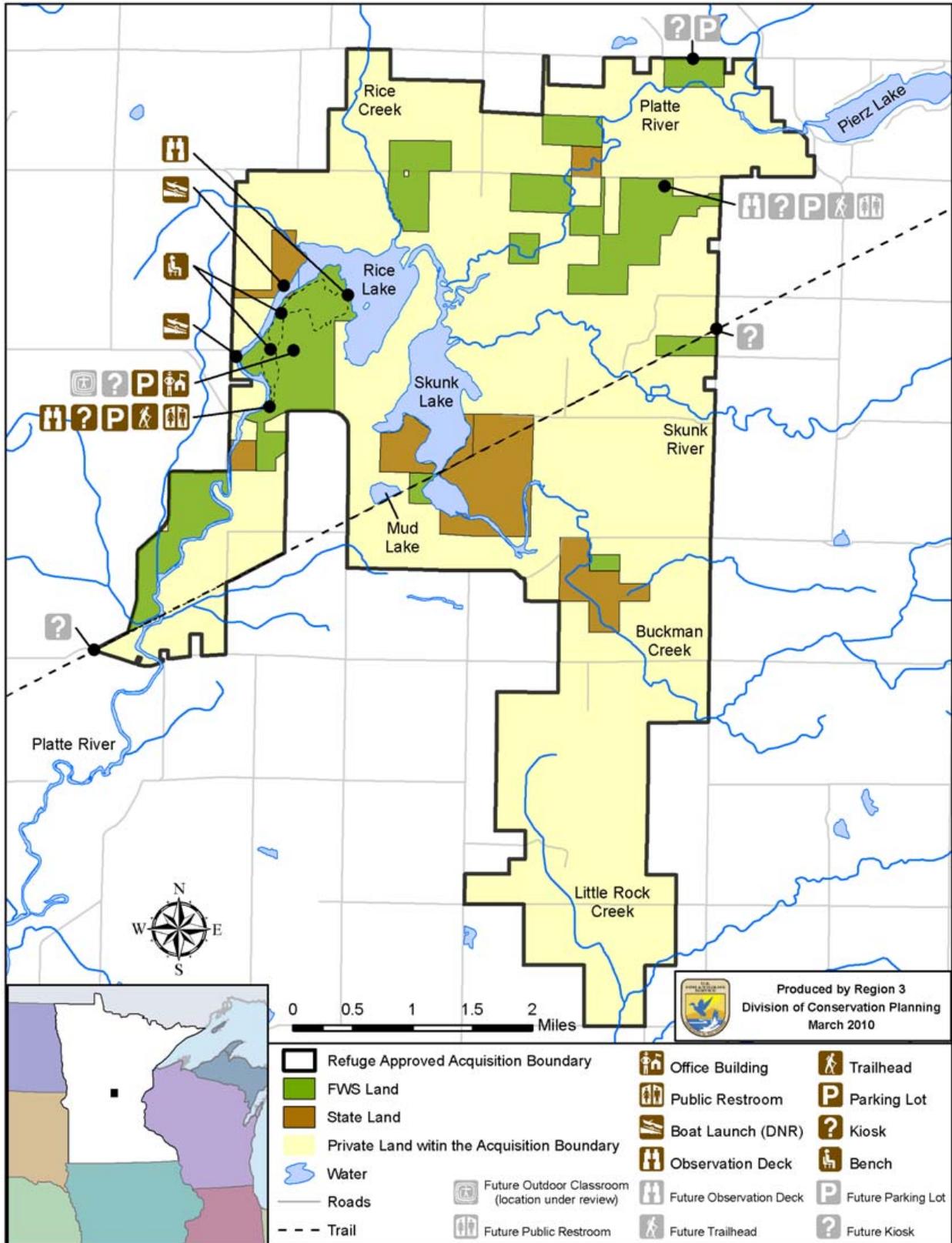


Table 1: Objectives by Alternative, Crane Meadows NWR

Management Consideration	Alternative A: Current Management Direction (No Action)	Alternative B: Habitat Restoration to Pre-settlement Benchmark Conditions and Increased Provision of Visitors Services (Preferred Alternative)	Alternative C: High Involvement in Watershed Improvement
<p>Goal 1: Conserve a diverse mosaic of habitats both on- and off-Refuge, particularly sedge meadow, shallow lake, oak savanna, prairie, and other declining endemic habitat types, to meet the needs of native plants and wildlife with emphasis on Service Regional Conservation Priority Species. Crane Meadows NWR will remain engaged in efforts to protect and enhance water quality and natural hydrology in the watershed.</p>			
<p>Refuge Habitat</p>			
<p>Wetlands Total Acquisition Boundary Acres = 7,329 Total Service-owned Acres = 1,041</p>	<p>Maintain existing wetland habitat, and restore disturbed, altered, or degraded wetland areas where feasible within five years of acquisition.</p>	<p>Same as Alternative A, plus: Over the long term (100-plus years) within the full Refuge acquisition boundary, maintain existing and restore drained or degraded wetland habitats in suitable areas to the desired benchmark conditions to achieve a minimum of 8,000 acres (approximately 60 percent of the Refuge) in a mosaic of wetland habitats with the approximate desired acreages targets displayed in Table 1 on page 6.</p>	<p>Same as Alternative B, plus: Over the life of the plan, coordinate with other agencies to restore a total of 2,000 wetland acres up-watershed.</p>
<p>Upland Prairie Total Acquisition Boundary Acres = 911 Total Service-owned Acres = 379</p>	<p>Seed all newly acquired disturbed, altered, or degraded upland areas to tallgrass prairie using local ecotype seed within five years of acquisition.</p>	<p>Seed all newly acquired disturbed, altered, or degraded upland areas to prairie (as a transition step for Southern Dry Savanna restoration) using local ecotype seed characteristic of savanna within five years of acquisition. Restore 20 percent (approximately 75 acres) of Service-owned upland prairie habitat to southern dry savanna. Within 3 years of plan approval identify the highest quality Service-owned upland prairie habitat to retain. Work in these areas to improve vegetation structure and composition to desired benchmark habitat conditions and develop quality prairie seed source areas. Over the long term (100-plus years) within the full Refuge acquisition boundary, maintain a minimum of 4 percent (approximately 500 acres) upland prairie habitat at desired benchmark habitat conditions, transitioning the remaining 3 percent (approximately 400 acres) to southern dry savanna.</p>	<p>Same as Alternative B, plus: Over the life of the plan, coordinate with other agencies to restore a total of 1,000 upland prairie acres up-watershed.</p>

Table 1: Objectives by Alternative, Crane Meadows NWR

Management Consideration	Alternative A: Current Management Direction (No Action)	Alternative B: Habitat Restoration to Pre-settlement Benchmark Conditions and Increased Provision of Visitors Services (Preferred Alternative)	Alternative C: High Involvement in Watershed Improvement
<p>Southern Dry Savanna (Oak and Jack Pine) Total Acquisition Boundary Acres = 185 Total Service-owned Acres = 5</p>	Maintain existing oak savanna habitat on Service-owned lands and on future acquisitions.	<p>Over the life of the plan, begin restoring southern dry savanna habitat to desired benchmark conditions on 30 percent (approximately 210 acres) of the total Service-owned land. This acreage will come from suitable existing upland prairie (approximately 75 acres) and oak woodland (approximately 135 acres) habitats.</p> <p>Over the long term (100-150 years) within the full Refuge acquisition boundary, establish and maintain a minimum of 35 percent (approximately 4,700 acres) southern dry savanna habitat. Existing oak savanna will be retained (~200 acres), and restoration will occur on existing upland prairies (~400 acres), oak woodlands (~1,550 acres), conifer forests and plantations (~300 acres), and agricultural areas (~2,250 acres).</p>	Same as Alternative B.
<p>Oak Woodland Total Acquisition Boundary Acres = 1,854 Total Service-owned Acres = 268</p>	No direct management.	<p>Within 3 years of plan approval identify the highest quality Service-owned oak woodland habitat to retain. Begin thinning 50 percent of those stands, outside the highest quality oak woodlands selected to be retained, to the desired basal area (ranging from 5 to 50 square feet/acre) and species composition for southern dry savanna habitat.</p> <p>Over the long term (100-plus years) within the full Refuge acquisition boundary, reduce coverage of oak woodland to 2 percent (approximately 300 acres), transitioning approximately 1,600 acres to southern dry savanna.</p>	Same as Alternative B.
Other Habitat Management Variables			
<p>Water Resource Monitoring, Management, and Watershed Conservation</p>	No involvement with state management of waters.	Within 5 years of plan approval, begin regular monitoring of the 5 major streams passing through the Refuge acquisition boundary. Work with partners to improve water quality with the long-term goal of removing all Refuge waters from state impaired waters lists.	Same as Alternative B, plus: Work up-watershed of the Refuge to expand the water monitoring program; identify the major sources of water pollution; educate landowners on water resource issues, best management practices, and available conservation programs; assist with conservation projects in areas that affect sensitive water resources; and improve the overall water quality entering the wetland complex.
<p>Prescribed Fire</p>	Use fire on Refuge units to reduce hazardous fuel loads, reduce woody encroachment, and rejuvenate and restore prairie and oak savanna habitat.	Implement and monitor a rotational prescribed burn program over the life of the plan that supports the fire dependent vegetation communities on the Refuge and reduces hazardous fuel loads according to historic guidelines.	Same as Alternative B.

Table 1: Objectives by Alternative, Crane Meadows NWR

Management Consideration	Alternative A: Current Management Direction (No Action)	Alternative B: Habitat Restoration to Pre-settlement Benchmark Conditions and Increased Provision of Visitors Services (Preferred Alternative)	Alternative C: High Involvement in Watershed Improvement
Land Acquisition	Continue opportunistic land acquisition as willing sellers and funding allow.	Within 3 years of plan approval, update the land acquisition priority map created for the environmental assessment that established the Refuge; over the life of the plan, increase efforts to make land acquisitions from willing landowners in high priority areas.	Same as Alternative B, plus: Identify up to 1,354 acres of land (10 percent of the existing approved acquisition acreage) adjacent to the Refuge with high water conservation value for acquisition.
Partners Program and FSA Easements	Opportunistically assist private landowners with habitat restoration of wetlands, oak savannas, and upland prairies through the Partners program, and periodically inspect FSA easements for violations.	Over the life of the plan, conduct a minimum of 100 habitat improvement projects through the Partners program within Morrison County, specifically targeting areas within, and up-watershed of the Refuge acquisition boundary. Ensure compliance of all properties with FSA easements (annual monitoring) and Partners program volunteer agreements (5-year monitoring cycle).	Within 5 years of plan approval, define land protection priorities based on water resources up-watershed of the Refuge, and over the life of the plan conduct 200 habitat improvement projects in high priority zones. Ensure compliance of all properties with FSA easements (annual monitoring) and Partners program volunteer agreements (monitor on a 5-year cycle).
Goal 2: Protect, restore, and maintain native wildlife species to ensure biological diversity and abundance, with special emphasis on Service Regional Conservation Priority Species.			
Wildlife – Animals			
Federal and state Threatened and Endangered Species and / or Regional Species of Conservation Priority	Participate in larger state and federal wildlife population monitoring efforts for species of conservation concern (currently Trumpeter Swan and Whooping Crane).	Same as Alternative A, plus: Within 5 years of plan approval, develop and implement monitoring programs for the Bald Eagle and Blanding’s Turtle.	Same as Alternative B.
Migratory Birds	Participate in larger state and federal wildlife population monitoring efforts, including: <ul style="list-style-type: none"> ■ Annual Crane Unison Call Surveys ■ Annual Midwest Crane Counts ■ Weekly/Biweekly Waterfowl Surveys ■ Weekly Bald Eagle Surveys ■ Annual Mourning Dove Surveys ■ Annual Woodcock Surveys ■ Annual Nest Boxes (Bluebird, Wood Duck, and Purple Martin) 	Same as Alternative A, plus: Over the life of the plan, conduct periodic monitoring of marshbirds, songbirds, and other migratory bird species.	Same as Alternative B.
Wildlife – Plants			
Native plant species	No active monitoring or management.	Within 5 years of plan approval, collaborate with the Minnesota DNR and other partners to conduct baseline inventories of plant species on the Refuge.	Same as Alternative B.

Table 1: Objectives by Alternative, Crane Meadows NWR

Management Consideration	Alternative A: Current Management Direction (No Action)	Alternative B: Habitat Restoration to Pre-settlement Benchmark Conditions and Increased Provision of Visitors Services (Preferred Alternative)	Alternative C: High Involvement in Watershed Improvement
Invasive / Exotic Plant Species	Follow invasive species trends in the local area, management action as needed.	<p>Within 5 years of plan approval, conduct a comprehensive survey to assess the extent of invasive plant species on Service-owned Refuge lands. Within 10 years no more than 10 percent of acquired Refuge lands will be affected by invasive plant species.</p> <p>Potential concerns at the time of writing include the following species:</p> <ul style="list-style-type: none"> ■ Purple loosestrife ■ Buckthorn ■ Cattail ■ Siberian elm ■ Phragmites ■ Box elder ■ Eurasian Water Milfoil ■ Black Locust ■ Spotted Knapweed ■ Common Tansy ■ Leafy Spurge ■ Japanese Knotweed ■ Aspen ■ Hairy Vetch ■ Crown Vetch ■ Canada Thistle 	Same as Alternative B, plus: Keep informed of annual invasive/exotic plant species trends in the watershed, assisting with control efforts where possible.
Wild Rice	Keep informed of the wild rice trends in the wetland complex.	Same as Alternative A, plus: Assist with monitoring and documenting wild rice trends through routine Service aerial imagery vegetation surveys.	Same as Alternative B.
Goal 3: As an active partner in collaborative conservation, the Refuge will provide quality wildlife-dependent recreation, environmental education, and outreach to a diverse audience. These activities will preserve cultural resources and promote understanding, appreciation, and support for Crane Meadows National Wildlife Refuge, the National Wildlife Refuge System, and natural resource conservation.			
People – Visitor Services			
Welcoming and Orienting Visitors	Maintain existing welcoming and orienting resources including the Platte River kiosk, two Refuge brochures (general and fire program), a bird checklist, and the Refuge website.	Bring all Refuge literature, web resources, kiosks, and directional signage into compliance with new Service standards within 10 years of plan approval, and expand welcoming and orienting facilities.	Same as Alternative B, plus: Add water resource and watershed topics to welcoming and orienting resources on the Headquarters Unit within 5 years, and on the Sedge Meadows Units within 15 years.
Hunting	Continue to post and enforce boundaries prohibiting hunting on the Refuge.	Within 5 years of plan approval, work with partners to open managed white-tailed deer and turkey hunts on specified Refuge units for hunters with disabilities and for youth hunters.	Same as Alternative B.

Table 1: Objectives by Alternative, Crane Meadows NWR

Management Consideration	Alternative A: Current Management Direction (No Action)	Alternative B: Habitat Restoration to Pre-settlement Benchmark Conditions and Increased Provision of Visitors Services (Preferred Alternative)	Alternative C: High Involvement in Watershed Improvement
Fishing	Continue to post and enforce boundaries prohibiting bank fishing on the Refuge.	Within 3 years, evaluate the potential to establish seasonal bank fishing opportunities on the Platte River West Unit; over the life of the plan evaluate the potential for new bank fishing opportunities as additional properties are acquired.	Promote and expand fishing programs on- and off-Refuge.
Wildlife Observation and Photography	Offer wildlife observation and photography opportunities along the 3.7-mile Platte River Trail (Headquarters Unit) seven days a week during daylight hours.	Over the life of the plan, maintain existing wildlife observation and photography infrastructure and opportunities, and expand and promote opportunities along the Soo Line Trail corridor and on the Sedge Meadow Unit to correspond to a 20 percent increase in Refuge visitation from 2009 levels.	Same as Alternative B, plus: Increase wildlife observation and photography opportunities in the watershed through new programs, partnerships, and the development of a watershed trail.
Environmental Education and Interpretation	Maintain Refuge environmental education and interpretation provision and participation at 2009 levels (approximately 500 people/year). In addition to self-directed learning, this includes staff-directed programs/activities listed below, talks, publications, audio-visual media, signs, and exhibits that convey key habitat, wildlife, and other natural resource messages to visitors. <ul style="list-style-type: none"> ■ Habitat Day ■ Platte River Cleanup Day ■ Winter Backyard Birdfeeding ■ Spring and Fall Birding Tours ■ Morrison County Water Festival ■ Pheasant Forever Youth Days (Sherburne and Anoka Counties) 	Increase Refuge environmental education and interpretation provision from 2009 levels. Specifically, increase participation in programs by 20 percent within 15 years, and establish new interpretive displays that convey key habitat, wildlife, and other natural resource messages to visitors on the following Refuge units: Headquarters, Highway 27, Sedge Meadow, Platte River West, and Soo Line East.	Same as Alternative B, plus: With 5 years of plan approval, develop an educational curriculum and interpretational materials covering a diversity of water-related topics such as the hydrologic cycle, the importance of wetlands, water quality, wild rice, and watershed health.
Outreach and Partnerships	Maintain relationships with current partners and existing outreach activities.	Same as Alternative A, plus: Maintain relationships with current partners and existing outreach activities, and identify and participate in at least 10 new outreach opportunities or community activities over the life of the plan to increase collaboration, improve the public understanding of Crane Meadows NWR and the Refuge System, and reinforce the importance of natural resource conservation.	Same as Alternative B, plus: Increase outreach to residents of the watershed, and interaction with water resource agencies and organizations over the life of the plan.
Cultural Resource Management	Over the life of the plan, protect all cultural, historic, and archaeological resources on the Refuge.	Same as Alternative A.	Same as Alternative A.

Table 1: Objectives by Alternative, Crane Meadows NWR

Management Consideration	Alternative A: Current Management Direction (No Action)	Alternative B: Habitat Restoration to Pre-settlement Benchmark Conditions and Increased Provision of Visitors Services (Preferred Alternative)	Alternative C: High Involvement in Watershed Improvement
Goal 3: As an active partner in collaborative conservation, the Refuge will provide quality wildlife-dependent recreation, environmental education, and outreach to a diverse audience. These activities will preserve cultural resources and promote understanding, appreciation, and support for Crane Meadows National Wildlife Refuge, the National Wildlife Refuge System, and natural resource conservation.			
People – Refuge Support			
Volunteers and Refuge Friends Group	Maintain current volunteerism and Friends Group membership at 2009 levels (approximately 100 and 85 people respectively), and continue providing opportunities to support the Refuge.	Over the life of the plan, increase Friends group membership by 10 percent, increase the 3-year moving average of annual service hours contributed by volunteers an average of 1 percent per year, and increase volunteer opportunities related to resource monitoring, environmental education, partnership development, land protection, and visitor services.	Same as Alternative B, plus: Target residents and communities within the watershed for volunteer recruitment, and endorse projects watershed-wide.
Law Enforcement	Work with local police authorities, state conservation officers, and law enforcement officers from other NWRs to ensure visitor safety and resource protection. Work to minimize the potential for incidents, violations, and other illegal activities on the Refuge.	Same as Alternative A.	Same as Alternative A.
Staffing	Staffing at the Refuge will include one FTE wildlife refuge specialist provided by Sherburne NWR, and one FTE maintenance position.	Increase staffing from the existing two positions to the four positions projected by the 2008 Region 3 staffing model to accomplish the work set forth by the CCP.	Same as Alternative B.